Evaluation: of Elephant grass (*Pennisetum purpureum* Schum) as an alternative feedstock in kiln of ceramic industry

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Elephant grass (*Pennisetum purpureum* Schum) has been identified as specie highly efficient of converting incident solar energy to chemical energy stored in carbohydrates in plants (photosynthetic cycle C_4), resultant at a large capacity for production of dry material. Globally, the photosynthetic process produces an estimated 40 ton/ha/year of dry material, equivalent in energy value to about 563 GJ (LHV = 13.4 MJ/kg, HHV = 14.6 MJ/kg). Elephant grass is widely used as forage for animal feed, but relatively little is known about its management as a potential alternative feedstock in combustion process.

The PIB-Biomass Integrated Project is a search project for the improvement of biomass, with emphasis in production and energetic use of Elephant grass. The PIB was articulated in seven subprojects.

As part of this project, in this study the discussion focuses an experiment investigate on the use of Elephant grass as a feedstock alternative for a ceramic industry. Special attention is being delivered to identify possible events taking place during a feeding in mechanic system and its combustion in bed fixed on grill in kiln of ceramic industry.

The investigations reveal that the Elephant grass, with especial regard to the combustion has potential for to reach temperature (1050ºC) which temperature is necessary to supply and to maintain request energy for to burn the ceramics product. However, a serious barrier to the adoption of biomass (Elephant grass) as an alternative feedstock was in a feeding.